

What is claimed is:

1. An electronic device a first dielectric layer comprising a first removable material, and a second dielectric layer comprising a second removable material.
2. The electronic device of claim 1 further comprising an etch differentiating layer disposed between the first dielectric layer and the second dielectric layer.
3. The electronic device of claim 2 wherein the etch differentiating layer comprises a third removable material.
4. The electronic device of claim 1 wherein at least one of the first removable material and second removable material comprises cross-linked polymeric particles.
5. The electronic device of claim 1 wherein the first dielectric layer and the second dielectric layer have an etch differential of at least 1:2.
6. The electronic device of claim 1 wherein both the first dielectric layer and the second dielectric layer are inorganic.
7. The electronic device of claim 1 further comprising a third layer on the second layer, wherein the third layer is inorganic.
8. The structure of claim 7 wherein the third layer comprises a fourth removable material.
9. The structure of claim 9 wherein the third layer has sufficient porosity to allow for removal of the first removable material and the second removable material through the third layer.
10. A method of manufacturing an electronic device comprising the steps of: a) disposing on a substrate a layer of a first dielectric material comprising a first removable material; b) disposing a layer of a second dielectric material on the first dielectric material layer, wherein the second dielectric material comprises a second removable material; and c) subjecting the substrate to conditions which at least partially remove the second removable material.
11. The method of claim 10 further comprising the step of disposing an etch stop layer between the layer of first dielectric material and the layer of second dielectric material.
12. The method of claim 11 wherein the etch stop layer comprises a third removable material.

13. The method of claim 10 wherein at least one of the first removable material and second removable material comprises a cross-linked polymeric particles.
14. The method of claim 10 wherein the layer of first dielectric material and the layer of second dielectric material have an etch differential of at least 1:2.
15. The method of claim 10 further comprising the step of disposing a third layer on the second layer, wherein the third layer is inorganic.
16. The method of claim 15 wherein the third layer comprises a fourth removable material porogen.
17. The method of claim 15 wherein the third layer has sufficient porosity to allow for removal of the first removable material and the second removable material through the third layer.
18. A method of manufacturing an electronic device comprising the steps of: a) disposing on a substrate a layer of a first dielectric material comprising a first removable material; b) disposing a layer of a second dielectric material on the first dielectric material layer, the second dielectric material comprising a second removable material; c) patterning the layers of both the first and second dielectric materials to provide apertures; d) vapor depositing a barrier layer on the surface of the first and second dielectric materials within the apertures; and e) depositing a metal into the apertures; wherein the first removable material and the second removable material have active sites suitable for providing a barrier layer.
19. The method of claim 18 wherein the active sites are chosen from carboxylate groups, amine groups, imine groups, oxime groups, hydroxy groups, aldehydes groups, disulfide groups, thiol groups and combination thereof.
20. A method of manufacturing an electronic device comprising the steps of: a) disposing on a substrate a layer of a dielectric material; b) patterning the dielectric material layer to provide apertures; c) depositing a barrier layer in the apertures; d) depositing copper in the apertures to fill the apertures; e) planarizing the copper; and f) selectively depositing a barrier layer on the surface of the copper.
21. A structure comprising a substrate; a dielectric layer disposed on the surface of the substrate, the dielectric layer comprising apertures extending from a top surface of the dielectric

layer downwardly into the dielectric layer; copper disposed in the apertures and having a top surface substantially planar with the top surface of the dielectric layer; and a barrier layer selectively disposed on the top surface of the copper.